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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,688	07/12/2001	Hideo Ogiwara	P 282642 T7KK-01S0230	1610

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PILLSBURY WINTHROP, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER

RICKMAN, HOLLY C

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 06/12/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,688

Applicant(s)

OGIWARA ET AL.

Examiner

Holly Rickman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-17, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 14 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 5 and 11 are objected to because of the following informalities: the phrase “exhibits a soft magnetic properties” in line 3 of each claim is grammatically incorrect. The word “a” should be deleted from the phrase in each claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-6 and 8-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term “fine particles” in claims 2-3 and 8-9 is a relative term which renders the claims indefinite. The term “fine particles” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claims 5 and 11 are rendered indefinite by the limitation “said layer...exhibits a soft magnetic properties under the temperature not higher than 10K and exhibits a paramagnetism under the temperature around room temperature.” Since 10K is below room temperature, the two ranges overlap. Thus, the limitation essentially requires that the layer exhibit

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paramagnetism and soft magnetic properties below 10K. It is not clear how the layer can be both at the same time.

Claims 4 and 10 are rendered indefinite by the limitation "said layer...has a saturation magnetization...not higher than 3980 A/m...and the magnetization is not saturated under the applied magnetic field not higher than 796,000 A/m." The Examiner has interpreted this limitation to mean that saturation magnetization is observed below 3980A/m and not below 796,000 A/m. However, the two ranges (0-796,000 A/m and 0-3980 A/m) overlap. Thus, it is not clear how the layer can be saturated and unsaturated below 3980 A/m.

Claims 6 and 12 are rendered indefinite by the limitation "the magnetization of said layer...is not saturated under the temperature around room temperature and under the applied magnetic field not higher than 796,000 A/m, and the layer...has a saturation magnetization under the temperature not higher than 10K and under the applied magnetic field not higher than 3980 A/m." Thus, the magnetization of the layer is saturated below 10K and 3980 A/m and is not saturated below room temperature and 796,000 A/m. This limitation is indefinite because ranges overlap and thus, it is not clear how the layer can be saturated and unsaturated at the same time (i.e., 0-3980 A/m falls within the range of less than 796,000 A/m and 0-10K falls within the range of less than room temperature).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 13, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirotaka et al. (JP 11-149628).

Hirotaka et al. disclose a perpendicular magnetic recording medium having a superparamagnetic underlayer formed from a granular film of fine soft magnetic particles (see abstract and translation, paragraphs 14 and claims).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-9, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirotaka et al. (JP 11-149628) in view of Onda (US 6417991).

Hirotaka et al. disclose a perpendicular magnetic recording medium having a superparamagnetic underlayer formed from a granular film of fine soft magnetic particles (see abstract). The reference fails to teach the specific structure of the disk drive for use therewith.

Onda teach that a hard disk drive includes several components including at least one magnetic recording medium, a spindle motor for driving the medium, a magnetic head, and an actuator assembly for moving the head relative to the medium (col. 3, lines 10-24).

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It would have been obvious to one of ordinary skill in the art at the time of invention to use the spindle motor, magnetic head and actuator assembly taught by Onda in combination with the recording medium taught by Hirotaka et al. in order to provide a functional hard disk drive.

8. Claims 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirotaka et al. (JP 11-149628).

Hirotaka et al. disclose a perpendicular magnetic recording medium having a superparamagnetic underlayer formed from a granular film of fine soft magnetic particles (see abstract). The reference fails to teach the specific particle diameter of the fine soft magnetic particles used therein.

It would have been obvious to one of ordinary skill in the art at the time of invention to determine the optimal particle size for the soft magnetic particles taught by Hirotaka et al. since particle size is directly related to superparamagnetism (i.e., superparamagnetism is achieved when a particular particle becomes small enough). Thus, it would have been obvious to optimize this result effective variable.

Allowable Subject Matter

9. Claims 14 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art to Hirotaka et al. fails to disclose a structure having the claimed properties. Furthermore, there is no basis to believe that the claimed properties would be inherently present in the structure taught by Hirotaka et al.

Response to Arguments

10. Applicant's arguments filed 3/20/03 have been fully considered but they are not persuasive.

It is still unclear even in view of Applicant's remarks, how the claims rejected above under 35 USC 112, 2nd paragraph are in fact definite. Thus, the rejections of record have been maintained.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (703) 305-2642. The examiner can normally be reached on Monday-Friday 9:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read "Holly Rickman". The signature is fluid and cursive, with the first name "Holly" being more prominent than the last name "Rickman".

Holly Rickman
Primary Examiner
Art Unit 1773

hcr
June 4, 2003